



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/929,295	08/13/2001	Randall Ho	EYEM1360	8107
23394	7590	07/26/2005	EXAMINER	
ROBROY R FAWCETT 1576 KATELLA WAY ESCONDIDO, CA 92027			KASSA, YOSEF	
			ART UNIT	PAPER NUMBER
			2625	

DATE MAILED: 07/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/929,295

Applicant(s)

HO ET AL

Examiner

YOSEF KASSA

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/21/02, 12/16/02

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

***Response to Arguments***

1. Applicant's arguments/amendment in pages 6-8 filed on March 31, 2005, with respect to the rejection of claims 1-6 under Guenter et al (U.S. Patent 6,072,496), Burns (U.S. Patent 5,828,769), and Maurer et al (U.S. Patent 6,580,811) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made on under Guenter et al (U.S. Patent 6,072,496) and Burns (U.S. Patent 5,828,769), and further in view of Szeliski et al (U.S. Patent 6,611,268).

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guenter et al (U.S. Patent 6,072,496), and further in view of Szeliski et al (U.S. Patent 6,611,268).

With regard to claim 1, Guenter et al discloses capturing a sequence of two-dimensional video image frames of the face of an actor (see col. 5, lines 10-17), for each video image frame (see Fig. 1, item 22), sensing the locations of the actor's facial features, i.e., facial expression, at predetermined node, i.e., marker, locations (see col. 5, lines 1-8), wherein each node location is associated with a particular facial feature

(see Fig. 14 and 15); driving control points on a three-dimensional head mesh based on the sensed node locations (see col. 15, lines 15-20) to generate a shaped three-dimensional head mesh (see col. 5, lines 28-33); warping the video image frame used to generate the sensed node location for projection onto the shaped head mesh (see col. 18, lines 25-41); and; and animating the three-dimensional video head by displaying (see Fig. 28, item 347) a sequence of the three-dimensional frame heads associated with the sequence of video image frames (see col. 6, lines 54-67).

Guenter does not explicitly call for texture mapping the warped video image frame onto the shaped head mesh to generate a three-dimensional frame head associated with the respective video image frame. However, in the same field of endeavor, Szeliski teaches this feature (see col. 26, lines 24-42). At the time of the invention was made, it would have been obvious to incorporate the teaching of Szeliski's three dimensional image processing system into Guenter et al three dimensional mesh system. The suggestion/motivation for doing so would have been to construct three-dimensional video image from two or more images. Therefore, it would have been obvious to combine Guenter with Szeliski to obtain the invention as specified in claim 1.

Claim 4 is similarly analyzed and rejected the same as claim 1.

3. Claims 2, 3, 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guenter et al (U.S. Patent 6,072,496), and further in view of Burns (U.S. Patent 5,828,769).

With regard to claim 2, while Guenter discloses sensing the locations of the facial features in the sequence of video image frames is performed using transformed facial image frames (see col. 2, lines 25-37), Guenter does not disclose for the video images are generated based on Wavelet transformations. However, in the same field of endeavor, Burns teaches this feature (see col. 2, lines 51-55). At the time of the invention was made, it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of Burns's three dimensional image positioning system into Guenter's system. The motivation for doing so is to provide visual recognition of an object of an image under variations of three-dimensional position and orientation of the object.

With regard to claim 3, while Guenter discloses sensing the locations of the facial features in the sequence of video image frames is performed using transformed facial image frames (see col. 2, lines 25-37), Guenter does not disclose for the video images are generated based on Gabor Wavelet transformations. However, in the same field of endeavor, Burns teaches this feature (see col. 2, lines 51-55). At the time of the invention was made, it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of Burns's three dimensional image positioning system into Guenter's system. The motivation for doing so is to provide visual recognition of an object of an image under variations of three-dimensional position and orientation of the object.

Claims 5 and 6 are similarly analyzed and rejected the same as claims 2 and 3.

***Other Prior Art Cited***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent No. (6430589) to Jennings, III disclose single precision array processor.

US Patent No. (6593936) to Huang et al disclose syntetic audeovisual description scheme...

US Patent No. (6597736) to Fadel disclose throughput enhanced video communication.

**Conclusion**

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to YOSEF KASSA whose telephone number is (703) 306-5918. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, BHAVESH MEHTA can be reached on (703) 308-5246. The fax phone numbers for the organization where this application or proceeding is assigned is (571) 273-8300 for regular communication and (571) 372-8300 for after Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the customer service office whose telephone number is (703) 306-5631. The group receptionist number for TC 2600 is (703) 305-4700.

Art Unit: 2625

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**PATENT EXAMINER**

Yosef Kassa



07/14/05.



**SANJIV SHAH  
PRIMARY EXAMINER**